

# Upgrading E18: A Practical Maintenance Solution using Tensar® Glasstex® R60N+C



## Preventive Maintenance of Asphalt Layers – Phase 3

Ras Al Khaimah, UAE

### CLIENT'S CHALLENGE

A preventative maintenance solution was needed that could slow pavement deterioration, mitigate reflective cracking, and withstand heavy traffic loading on the E18 corridor. The client also needed to facilitate minimal disruption to road users, no increase in pavement thickness, and a cost-efficient method that extended service life while preserving existing geometric constraints.

### TENSAR SOLUTION

Tensar's R60N+C asphalt reinforcement was installed beneath the new overlay to control reflective cracking, improve tensile stiffness, and enhance fatigue resistance. The composite grid provided rapid installation, required no increase in asphalt thickness, and delivered a durable, cost-efficient preventative maintenance solution suited to the E18 corridor's heavy traffic demands.

## BENEFITS

- **Reduces reflective cracking**, improving long-term overlay asphalt performance
- **Enhances tensile stiffness**, distributing traffic loads more effectively
- **Extends pavement service life** without increasing overlay thickness
- **Enables rapid installation**, minimizing disruption to live traffic

# Tensar®

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### PROJECT DETAILS

Application

**Asphalt Reinforcement | No. 553**

Constructed in

**2024**

Client

**Ministry of Energy & Infrastructure**

Contractor

**City Construction General Contracting LLC.**

Product

**R60N+C**



Leveling the soft subgrade prior to laying geogrid.

## PROJECT BACKGROUND

The E18 Road connecting Taweem to Khatt Roundabout in Ras Al Khaimah is a strategically important regional corridor supporting both local and inter-emirate movement. The route experiences continuous traffic, including a significant proportion of heavy vehicles transporting quarry materials from the surrounding mountainous areas. Over time, this loading, combined with high seasonal temperatures and natural asphalt ageing, led to progressive pavement deterioration. Surface cracking, localised deformation, and early signs of fatigue distress became increasingly evident, prompting the need for a structured preventive maintenance program.

As part of the 2024 pavement preservation initiative, Phase 3 – Project 27/2024 was launched to restore the functionality of the deteriorated pavement sections and extend the overall service life of the road. The primary objective was to implement a solution that would enhance the performance of the asphalt layers, mitigate reflective cracking, and resist further fatigue damage—all without increasing pavement thickness or causing extended traffic disruption.

Given the project's constraints, the design team sought a high-performance reinforcement system compatible with rapid installation and conventional paving operations. Tensar R60 N+C, an engineered asphalt reinforcement composite designed to improve tensile stiffness and retard crack propagation, was identified as the optimal solution. Its incorporation beneath the new overlay provided the required mechanical benefits while maintaining existing geometric profiles.

This preventive maintenance strategy ensured a durable, cost-effective improvement to the E18 corridor, supporting longterm road network reliability in Ras Al Khaimah.

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